

AMENDMENTS TO THE CLAIMS

1. – 11. (Cancelled)

12. (Currently Amended) A method for differentiating mammalian bone marrow cells or cord blood-derived cells into myocardial precursor cells and/or myocardial cells without genetic engineering comprising:

culturing said bone marrow cells or cord blood-derived cells with fat cells isolated from mammalian fat tissues or a culture supernatant thereof, wherein said bone marrow cells or cord blood-derived cells are induced to differentiate into myocardial precursor cells and/or myocardial cells.

13. (Previously Presented) The method according to claim 12, wherein culture is conducted for at least 1 day using a culture solution containing serum or any substitute thereof.

14. (Previously Presented) The method according to claim 13, wherein culture is conducted with the addition of at least one cytokine to a culture solution.

15. (Previously Presented) The method according to claim 14, wherein the cytokine is selected from the group consisting of members of the EGF family, members of the TGF- β family, members of the IL family, members of the VEGF family, members of the PDGF family, members of the Ephrin family, and SCF.

16. (Previously Presented) The method according to claim 12, wherein the bone marrow cells are mesenchymal stem cells or hematopoietic stem cells.

17. (Previously Presented) The method according to claim 12, wherein the cord blood-derived cells are mononuclear cells.

18. (Previously Presented) The method according to claim 12, wherein the bone marrow cells or cord blood-derived cells are mixed with the cells isolated from fat tissues at a ratio of 1:1 to 1:10.

19. (Previously Presented) The method according to claim 12, wherein the myocardial precursor cells and/or myocardial cells are sarcomeric actin-positive cells.

20. (Withdrawn) Myocardial precursor cells and/or myocardial cells prepared by the method according to claim 12.

21. (Withdrawn) The myocardial precursor cells and/or myocardial cells according to claim 20, which can be transplanted into mammalian adults.

22. (Withdrawn) A method for evaluating the effects of a test substance on myocardial precursor cells and/or myocardial cells by adding the test substance to the myocardial precursor cells and/or myocardial cells according to claim 20.

23. (Previously Presented) The method according to claim 15, wherein said cytokine is a member of the EGF family selected from EGF, TGF- α , HB-EGF, FGF, or HGF.

24. (Withdrawn) The method according to claim 15, wherein said cytokine is a member members of the PDGF family selected from PDGF-AB or PDGF-BB.

25. (Previously Presented) The method according to claim 12, wherein said mammalian bone marrow cells or cord blood-derived cells are derived from the same species as said cells isolated from mammalian fat tissues or a culture supernatant thereof.

26. (Previously Presented) The method according to claim 12, wherein the bone marrow cells or cord blood-derived cells are mixed with the cells isolated from fat tissues at a ratio of 1:4.

27. (New) A method for differentiating mammalian bone marrow cells or cord blood-derived cells into myocardial precursor cells and/or myocardial cells without genetic engineering comprising:

culturing a mixture consisting essentially of said bone marrow cells or cord blood-derived cells with cells isolated from mammalian fat tissues or a culture supernatant thereof, wherein said bone marrow cells or cord blood-derived cells are induced to differentiate into myocardial precursor cells and/or myocardial cells.